

PROCEDURE F-8-1
(formerly referenced by 08-04)

**Determination of Phosphorus Removal Requirements for
Municipal, Institutional and Private
Sewage Treatment Works**

PROCEDURE F-8-1

DETERMINATION OF PHOSPHORUS REMOVAL REQUIREMENTS FOR MUNICIPAL, INSTITUTIONAL AND PRIVATE SEWAGE TREATMENT WORKS

1. Introduction

The phosphorus removal program was adopted by the Ontario Water Resources Commission by resolution passed on July 9, 1970. The first phosphorus removal facilities were to be operational by December 31, 1973, while the remainder were to be operational by December 31, 1975. Background information on the phosphorus removal program is included in the document entitled "Summary Report on the Phosphorus Removal Program", April 1976. The signing in October 1983 of the "Supplementary Agreement" to the 1978 Canada-United States Agreement on Great Lakes Water Quality modified the phosphorus removal mandate to include phosphorus removal at all municipal and institutional facilities with a nominal design capacity of 4,546 m³/d (1.0 mlgd) or greater in the Upper Lakes Basin. Copies of the Supplementary Agreement or the Summary Report can be obtained from the Program Development and Support Branch.

2. Terminology

- 2.1 Total phosphorus removal and effluent level requirements referred to in this guideline shall be evaluated (for compliance purposes) in accordance with the provisions under Guideline F-5: "Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters" and F-10: "Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)" and their associated procedures.
- 2.2 Effluent total phosphorus level requirements are expressed in terms of mg/L as Phosphorus unless otherwise stated.
- 2.3 A sewage treatment works "nominal design capacity" refers to the treatment capacity in terms of average daily flow rate.
- 2.4 Lake Superior Basin includes all tributary streams draining into Lake Superior.
- 2.5 Lake Huron Basin includes all tributary streams draining into Lake Huron including the St. Mary's River.
- 2.6 Lake Erie Basin includes all tributary streams draining to Lake Erie, including the St. Clair - Lake St. Clair - Detroit River system.
- 2.7 Lake Ontario Basin includes all tributary streams draining to Lake Ontario, including the Niagara River and the Welland Canal. Also included in the Lake Ontario Basin is the International Section of the St. Lawrence River.

3.0 **Municipal Phosphorus Removal Requirements**

For updated information on the municipalities requiring phosphorus removal and effluent requirements, refer to the list entitled, "Province of Ontario Phosphorus Removal Requirements" & (June 1984). The Program Development Branch will update this list periodically and should be contacted if questions arise.

4.0 **Exemption from Equipment Installation Requirements**

Sewage treatment works which are capable of satisfying the applicable total phosphorus removal or effluent level requirements without supplementary chemical addition will not be required to install phosphorus removal facilities. Dilution is not acceptable as a means of achieving the required effluent levels.

5.0 **Design Guidelines**

For information on the design of phosphorus removal facilities, reference should be made to **Guidelines for the Design of Sewage Treatment Works**.